

**REMARKS**

This paper is a full and complete response to the December 30, 2002 office action. The claims herein are in a condition for allowance and allowance of the application is respectfully requested.

**I. Status of the Claims**

Claims 1-24 are currently pending

Claims 1-24 are rejected.

**II. Rejections Under 35 U.S.C. § 103**

Claims 1-10, 12-15, 17-20 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cardorniga et al. (USPN 5,415,937) in view of Shaw (USPN 4,877,252) and Oka et al. (USPN 5,072,945). Applicants respectively traverse the rejection for the following reason.

Cardorniga et al discloses a golf ball having a cover blend. No dimple pattern is shown or suggested. Cardorniga provides no teaching involving the use of any specific dimple pattern.

Shaw discloses the use of a dodecahedron dimple pattern, among several possible choices on the surface of a golf ball. The suggested motivation to produce the

applicants' invention is alleged to be presented at column 1, lines 55-60, reproduced below:

*The pattern of a golf ball according to the **present invention can be so arranged** that when the ball is played, **the dimple pattern will influence the axis of spin**. Thus, it is possible to design the flight characteristics of such a ball to have a high degree of control and accuracy.*

The claims do not include limitations to "a dimple pattern" that "will influence the axis of spin" as discussed by the examiner. Shaw is clear about what the terms "arranged" and "dimple pattern" and "axis of spin" mean. The meanings are disclosed at column 1, lines 34-44:

The golf balls of the present invention can have the **dimples arranged in a repeating pattern** over the whole spherical outer surface of the ball, the **pattern being defined** by projecting on to the ball surface the edge of a regular polyhedron. **For example**, the polyhedron may be: a **cube** (six square faces); an **octahedron** (eight rectangular faces); a **dodecahedron** (twelve pentagonal faces); an **icosahedron** (twenty triangular faces); or an **icosidodecahedron** (twelve pentagonal and twenty triangular faces).

The suggested arrangement is clearly limited to arranging a projection of dimples in a pattern of a cube, octahedron, dodecahedron or icosidodecahedron.

Claims 1-10, 12-15, 17-20 and 24 which currently stand rejected have a required limitation of ten great circle paths. Shaw fails to show or suggest, either singly or in combination with the other references, a golf ball having

ten great circle paths. The dimple pattern influencing the axis of spin is not an element and provides no motivation to produce the applicants' invention. Furthermore, the element or teaching of Oka (discussed in detail below) that "arrangement of dimples along the great circle influence the axis of spin and type of hitting the golf ball is suited for" does not describe the instant invention and therefore fails to provide the necessary motivation to produce the instant claimed invention. The examiner states "[t]herefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have **any number of great circles on a golf ball**, being free of dimples, dividing the pentagons within a dodecahedron pattern into triangles, as taught by Oka et al. and Shaw." As now explained, the basis for this statement is directly contrary to the teachings of the cited references involving great circles free of dimples.

The Shaw '252 patent specifically discloses with respect to great circle paths at column 2, line 39-44, that "FIG. 3 shows a golf ball (indicated generally at 30) having a repeating dimple pattern indicated by chain dotted lines 31, 32, 33, 34 and 35 represent **five of the six 'great circles' of the ball, the sixth 'great circle' not being visible in the view shown in FIG. 3.**" Shaw clearly

teaches the use of six great circle paths, and provides motivation against adding more great circle paths free of dimples.

The Shaw '252 patent further discloses at column 1, line 15-18 that "[w]e have found that the aforementioned playing characteristics can be considerably enhanced by so **arranging the dimples on the surface of the ball that at least some dimples touch or overlap.**" The addition of four more additional great circle paths free of dimples (to produce a total of ten) will reduce the amount of potential dimple overlap that Shaw teaches as enhancing ball performance.

Shaw teaches away from the addition of more great circle paths at column 1, lines 5-14 when by stating that:

It is well known to provide golf balls with a plurality of dimples in the spherical surface of the ball and there have been many previous proposals to distribute those dimples in a repeating pattern. It is **understood by those skilled in the relevant art that the dimple pattern, together with any non-dimpled areas, affects the playing characteristics of the ball.** In particular, the flight path and flight distance of a golf ball, as well as the degree of air-resistance encountered during flight, **can be greatly affected by the dimple pattern.**

We have now found that the aforementioned playing characteristics can be considerably enhanced by so arranging the dimples on the surface of the ball that at least some adjacent dimples touch or overlap.

Accordingly, the present invention provides a golf ball having a plurality of dimples in its spherical outer surface, in which **at least 10% of the dimples are so disposed relative to one another that**

***the peripheries of any two adjacent dimples extend inside each other to form an overlapping region.***  
(emphasis added).

Therefore the literal teaching of Shaw should only motivate one skilled in the art to produce a golf ball with a dodecahedron pattern, six great circle paths free of dimples and a plurality of at least 10% overlapping dimples.

Adding additional great circle paths would decrease the amount of overlapping dimples. Even if one were to ignore the detriment to Shaw by reducing the effects of the overlapping features of the dimples, there is still no motivation given by Shaw to have ten great circle paths. Conversely the warning of Shaw that the **non-dimpled areas greatly effects performance** would teach away from adding additional non-dimpled golf ball area to the surface of the ball by adding more great circle paths for fear of greatly effecting performance in a negative manner. In short there is no motivation, teaching or suggestion in Shaw to provide ten great circle paths free of dimples.

Oka et al. (USPN 5,072,945) is combined with the above discussed references for it's alleged teaching that "Oka et al. discloses a golf ball having no dimples intersecting the great circle line to eliminate the difference in the

*trajectory heights of seam hitting and pole hitting".*

Through an accurate quotation from Oka, the statement has little relevance to the claims of the Applicants invention. This statement concerns trajectory heights which are neither discussed nor claimed by the Applicants, and which have little relevance involving the Applicants' invention. The statement does not have any bearing on the issue of multiple great circle paths.

Oka only discloses the use of a **maximum of only one dimple free great circle path at the mold parting line** and teaches away from additional great circle paths free of dimples. Oka teaches the positioning of dimples to minimize the effect of having one great circle path free of dimples. This position is supported by the statements at on column 1, lines 19-35 concerning dimple free great circle paths:

*In order to improve the aerodynamic characteristic of the golf ball, as disclosed in Oka et al., U.S. Pat. No. 4,813,677, it is **preferable to form dimples densely on the surface thereof and reduce the number of great circle zones which intersect no dimples.***

*However, one great circle zone is inevitably **formed on the surface of the golf ball.** The golf ball is normally molded by a split metallic mold composed of semi-spherical upper and lower molds, a burr is formed at the junction of the molds, i.e. at a parting line between the upper and lower molds during the molding. Such burr is to be scraped off in a later processing by buffing to form a seam thereat, and therefore, the dimples can not be provided on the seam*

*to facilitate buffing of the burr. In result, the golf ball has on its spherical surface a great circle zone which intersect no dimples even though dimples are densely formed thereon. (emphasis added).*

It is clear from the statement that Oka does not teach having more than one great circle path free of dimples. Oka instead discloses limiting the number of great circle paths. The combination of Shaw and Oka does not motivate one skilled in the art to apply 10 great circle paths. Instead, Oka combined with Shaw If motivates one to have **fewer** than six great circle paths and not increase them to ten because of the detrimental effect on the performance of the ball's aerodynamics. The inescapable conclusion is that any finding that the Oka and Shaw combination will motivate one to "have any number of great circles on a golf ball, being free of dimples" is unsupported and contrary to the teachings of the references.

Oka further fails to provide either singly, or in combination, the teaching or motivation to produce a cover having a blend of ionomers, a dodecahedron pattern having ten great circle paths free of dimples. It is axiomatic that prior art references must be considered for all that they teach. There can be no question that Oka teaches away from the use of ten great circle paths. One skilled in the art would have to discard all teachings provided by Oka and

act in manner contrary to Oka's teachings. Oka is additionally silent regarding all the other features claimed and thus, it is improper to combine with other references to provide the motivation to produce ten great circle paths.

Taking into consideration all the references cited against the claims, a prima facie case of obviousness has not been established because no prior art reference, taken singly or in combination, shows suggests or motivates one to have the claimed dodecahedron dimple pattern with ten great circles free of dimples.

Further discussed in the office action is the statement that "[i]t would also appear that the number of dimples and great circles are merely design choices due to the fact that the applicant does not state the reason as to why 360 and 10 great circles are critical to obtain the invention." The "why" of what makes the claimed invention work is not a requirement to secure a patent. It is settled law that an inventor need not know how an invention works. His obligation is to meet the requirements of 35 U.S.C. The balls' cover and dimple features produces a ball having superior features that were not known in the art and thus a patent should be granted unless proof to the contrary is provided by the patent office. A golf ball,



being over 500 years old, has a well known utility and the applicant is not required to degrade or state the disadvantages of the prior art features of another's earlier invention to be granted a patent. It is required only to disclose features or combinations that the applicants deem to be novel and unobvious in a manner that one skilled in the art would be enabled to produce the invention.

Claims 1-10, 12-15, 17-20 and 24 are allowable because the combination of Cadorniga, Shaw and Oka fails to teach either singly or in combination a ball having an ionomer cover blend with a dodecahedron pattern with ten great circle paths free of dimples as are required in independent claims 1, 18 and 24. The absence of a valid prima facie obviousness rejection necessitates the removal of the rejection and allowance of claims 1-10, 12-15, 17-20 and 24. Applicants therefore respectfully request reconsideration and removal of the 103 rejection and allowance of the claims.

Claims 11 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cadorniga et al. (USPN 5,415,937) in view of Shaw (USPN 4,877,252) and Oka et al (USPN 5,072,945) and further in view of Cadorniga (USPN 5,470,076). The examiner correctly states that "Cardorniga

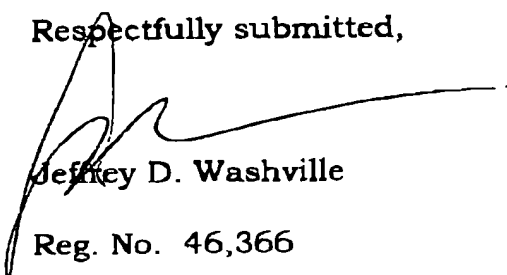
discloses a golf ball having a plurality of dimples . . . which the dimples comprise of a minor dimple within a major dimple." Claims 11 and 21 are allowable because the combination of Cadorniga '937, Shaw and Oka fails to teach either singly or in combination a ball having an ionomer cover blend with a dodecahedron pattern with ten great circle paths free of dimples as are required in independent base claims 1 and 18. The addition of Cadorniga '076 to the cited combination teaches dimples having a dual radius, but it fails to teach or provide any motivation to use ten great circle paths with a dodecahedron pattern. The deficiencies of the rejection of the base claim are not addressed by this combination and thus claims 11 and 21 are allowable as they depend from claims which are allowable.

Applicants respectfully request reconsideration and removal of the obviousness rejection. The cited references fail to produce the instant claimed invention either singly or in combination and thus allowance is warranted.

III. Conclusion

Based on the foregoing discussion, it is respectfully requested that all rejections be withdrawn and the application be passed to issue.

Respectfully submitted,



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The undersigned hereby certifies that this paper along with any paper or document referred to therein as being attached or enclosed, is being deposited with the United States Postal Service via First Class Mail, Postage Prepaid, service under 37 C.F.R. § 1.8, in an envelope addressed to the Assistant Commissioner for Patents, Box AF, (703) 308-7768, Washington D.C. 20231- This 28<sup>th</sup> day of February 2003.



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